Impedance characterization of PV modules in outdoor conditions - DTU Orbit (09/11/2017)

Impedance characterization of PV modules in outdoor conditions

Impedance spectroscopy (IS) has been used for laboratory characterizations of photovoltaic (PV) technologies under well controlled conditions. This work applies IS for outdoor characterization of PV panels, in order to observe the effect of irradiance (G) and temperature (T) on the PV module's impedance spectrum, and further construct an impedance model that can link environmental changes to the model's parameters. To achieve this, an optimized setup has been developed for long-term impedance spectra monitoring synchronised with accurate irradiance and temperature data. Preliminary results show clear correlation between the determined parameters and ambient conditions.

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